

Application No. 10/625,315

REMARKS

Claims 1-16 are pending in this application. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5). Claims 8-12 are rejected under 35 U.S.C. §112 as being indefinite. Claims 1, 2, 4, 7, 13 and 16 are rejected under 35 U.S.C. §102(e) as being anticipated by Munshi et al, U.S. Patent No. 6,469,700 ("Munshi"). Claim 15 is rejected under 35 U.S.C. §102(b) as being anticipated by Migdal et al, U.S. Patent No. 5,760,783 ("Migdal"). Claims 1 and 6 are rejected under 35 U.S.C. §102(b) as being anticipated by Fadden, U.S. Patent No. 6,002,407 ("Fadden"). Claim 5 is rejected under 35 U.S.C. §103(a) as being unpatentable over Munshi in view of Wilde, U.S. Patent No. 5,986,663 ("Wilde"). Claim 3 is rejected under 35 U.S.C. §103(a) as being unpatentable over Munshi in view of Migdal. Claims 8, 9, and 14 are rejected under 35 U.S.C. §103(a) as being unpatentable over Munshi in view of Murphy, U.S. Patent No. 6,038,031 ("Murphy"). Claims 10 and 11 are rejected under 35 U.S.C. §103(a) as being unpatentable over Munshi in view of Murphy and in further view of Duluk, Jr. et al , U.S. Patent No. 6,476,807 ("Duluk"). Claim 12 is rejected under 35 U.S.C. §103(a) as being unpatentable over Munshi in view of Murphy and in further view of Emberling et al, U.S. Patent No. 6,246,422 ("Emberling"). Reconsideration of the rejections is hereby solicited in view of the foregoing amendments and following remarks.

OBJECTIONS TO THE DRAWINGS

The specification has been amended to add reference characters present in the drawing, but missing or incorrectly identified in the description. Accordingly, applicant requests withdrawal of this rejection.

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REJECTIONS UNDER 35 U.S.C. §112

Claims 8 and 12 have been amended to correct for indefiniteness. Accordingly, applicant submits that the rejection of claim 8, and dependent claims 9-12 under 35 U.S.C. §112 should be withdrawn.

REJECTIONS UNDER 35 U.S.C. §102

Claims 1, 2, 4, 7, 13 and 16 are rejected under 35 U.S.C. §102(e) as being anticipated by Munshi. For the reasons described below, applicant believes that Munshi fails to teach or suggest the present invention.

Claim 1 has been amended to highlight patentable aspects of the present invention that may not have been fully appreciated. As amended, claim 1 recites features not taught or suggested in any of the cited prior art. Specifically, amended claim 1 recites a method of "providing a 3D computer graphic object" and "rendering the 3D computer graphic object to a 2D texture map." In essence, the claim calls for converting a 3D object to a 2D texture to represent the object more simply and reduce processing demands compared to maintaining a 3D representation.

Munshi lacks any teaching or suggestion of rendering a 3D object to a 2D texture map. In contrast, Munshi appears to teach a completely different technique of applying a 2D texture map to a 3D object. See, for example, Munshi, Column 2, lines 10- 14. Accordingly, the textured 3D object of Munshi remains represented three dimensionally. Thus, Munshi teaches directly away from the present invention. For the above reasons, Munshi fails to teach or suggest the features of claim 1 and withdrawal of the rejection is requested.

Claims 2, 4, and 7 depend, respectively, from independent claim 1 and incorporate all the elements of claim 1. As described above with respect to claim 1, Munshi is not believed to be a valid reference. Accordingly, the respective combinations taught by independent claim 1 and dependent claims 2, 4, and 7

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are not taught in Munshi. Thus, applicant submits that claims 2, 4, and 7 are in condition for allowance.

Claim 13 has been amended to highlight patentable aspects of the present invention that may not have been fully appreciated. As amended, claim 13 recites features not taught or suggested in any of the cited prior art. Specifically, amended claim 13 recites "creating an imposter of the 3D computer graphic object by rendering the 3D object to a 2D texture map." For at least the reasons described above with regard to claim 1, nothing in Munshi teaches or suggests this feature. Accordingly, Munshi fails to support of rejection of claim 13 under 35 U.S.C. §102(e), and withdrawal of the rejection is requested.

Claim 16 recites a "computer graphics generator apparatus card comprising a rasterizer for rendering a 3D computer graphic object to a 2D texture map." For at least the reasons described above with regard to claim 1, nothing in Munshi teaches or suggests a graphic card having this feature. Accordingly, Munshi fails to support of rejection of claim 16 under 35 U.S.C. §102(e), and withdrawal of the rejection is requested.

Claim 15 is rejected under 35 U.S.C. §102(b) as being anticipated by Migdal. Claim 15 recites a computer graphics generator apparatus comprising "a rasterizer for rendering a 3D computer graphic object to a 2D texture map." Migdal lacks any teaching or suggestion of this feature. In contrast, Migdal appears to only teach a rasterizer that performs a completely different operation of applying a texture map to an object to produce an object having texture applied thereon. See, for example, Migdal, FIG. 2, element 224, FIG. 10, element 1030 and column 1, lines 17-22. Consequently, Migdal teaches away from the present invention. For these reasons, Migdal fails to support of rejection of claim 1 under 35 U.S.C. §102(b), and withdrawal of the rejection is requested.

Claims 1 and 6 are rejected under 35 U.S.C. §102(b) as being anticipated by Fadden. For the reasons described below, applicant believes that Fadden fails to teach or suggest the present invention.

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Amended claim 1 recites "providing a 3D computer graphic object" and "rendering the 3D computer graphic object to a 2D texture map." Nowhere does Fadden appear to teach or suggest rendering a 3D object to a 2D texture map. Accordingly, Fadden fails to support or rejection of claim 1 under 35 U.S.C. §102(e), and withdrawal of the rejection is requested.

Claim 6 depends from independent claim 1, and incorporates all the elements of claim 1. As described above with respect to claim 1, Fadden is not believed to be a valid reference. Therefore, the respective combinations taught by independent claim 1 and dependent claim 6 is not taught in Fadden. Thus, applicant submits that claims 6 is in condition for allowance.

REJECTIONS UNDER 35 U.S.C. §103

Claim 5 is rejected under 35 U.S.C. §103(a) as being unpatentable over Munshi in view of Wilde. Claim 5 depends from claim 1 and incorporates all the elements of claim 1. As described above, amended claim 1 is believed to be in condition for allowance. Consequently, the combination taught by claims 1 and 5 is not taught by Munshi. Although applicant concurs with the Office Action's statement that Munshi fails to teach "rendering the 3D computer graphic object to a 2D texture map at a resolution greater than the resolution of the 3D computer graphic object," it is not seen how one could possibly combine the teaching of Munshi with the teachings of Wilde to arrive at applicant's claimed invention.

In particular, Wilde appears to merely teach a plurality of texture maps having different levels of detail. See, for example, Wilde, column 8, lines 3 to 24. Significantly, there is no teaching or suggestion in either of these patents to render a "3D computer graphic object to a 2D texture map" or perform this rendering "at a resolution greater than the resolution of the 3D computer graphic object." For these reasons, applicant respectfully submits that neither Munshi nor Wilde, alone or in combination, renders claim 5 unpatentable.

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Claim 3 is rejected under 35 U.S.C. §103(a) as being unpatentable over Munshi in view of Migdal. Claim 3 depends from claim 1 and incorporates all the elements of claim 1. As described above, amended claim 1 is believed to be in condition for allowance. Consequently, Munshi fails to teach or suggest the combinations taught by independent claim 1 and dependent claim 3. Thus, applicant submits that claim 3 is in condition for allowance.

Claims 8, 9, and 14 are rejected under 35 U.S.C. §103(a) as being unpatentable over Munshi in view of Murphy. For the reasons described below, applicant believes that neither Munshi nor Murphy, alone or in combination, teaches or suggests the present invention.

Amended claim 8 depends from claim 1 and incorporates all the elements of claim 1. As described above, amended claim 1 is believed to be in condition for allowance. Therefore, the combination of claim 1 and claim 8 is not taught or suggested in the prior art. Furthermore, applicant concurs with the Office Action's statement that Munshi fails to teach "internally rendering, in a first pass, the 3D computer graphic object to the 2D texture map using the object color values and the object alpha values of the 3D computer graphic object and the texture color values of the 2D texture map to generate initially rendered alpha values and initially rendered color values" and "internally re-rendering, in a second pass, the 3D computer graphic object to a 2D texture map to overwrite the initially rendered alpha values rendered in the first pass with corrected alpha values." However, it is not seen how one could possibly combine the teachings of Munshi with the teachings of Murphy to arrive at applicant's claimed invention.

In particular, Murphy appears to teach an entirely different method of using alpha values to copy textures so as to eliminate artifacts generated by an image key portion of the texture. See, for example, Murphy, column 5, lines 14 to 23. Significantly, there is no suggestion in either of these patents to render a "3D computer graphic object to [a] 2D texture map using the object color values and the object alpha values of the 3D computer graphic object and the texture

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color values of the 2D texture map." Nor is there any suggestion in either of the cited patents to re-render "the 3D computer graphic object to a 2D texture map to overwrite the initially rendered alpha values rendered in the first pass so that translucent features of the 3D object are more accurately represented in the 2D texture map." For these reasons, applicant respectfully submits that neither Munshi nor Murphy, alone or in combination, renders claim 8 unpatentable.

Claim 9 depends from claim 1 and claim 8 and incorporates all the elements of these claims. As described above, amended claim 1 is believed to be in condition for allowance. Therefore the combination of claims 1, 8, and 9 are not taught or suggested in the prior art. Thus, applicant submits that claim 9 is in condition for allowance.

Claim 14 has been amended to highlight patentable aspects of the present invention that may not have been fully appreciated. As amended, claim 14 recites features not taught or suggested in any of the cited prior art. Specifically, amended claim 14 recites a method of preserving translucency in a computer graphics imposter comprising "internally rendering...[a] 3D computer graphic object to [a] 2D texture map using color values and alpha values corresponding to the 3D computer graphic object, and color values corresponding to the 2D texture map" and then "internally re-rendering the 3D computer graphic object to a 2D texture map to overwrite alpha values rendered in the first pass with corrected alpha values so that translucent features of the 3D object are more accurately represented in the 2D texture map." Munshi fails to teach or suggest these features. In addition, it is not seen how one could possibly combine the teaching of Munshi with the teachings of Murphy to arrive at applicant's claimed invention.

In particular, Murphy teaches away from the present invention by teaching an entirely different method of using alpha values to copy textures so as to eliminate artifacts generated by an image key portion of the texture. See, for example, Murphy, column 5, lines 14 to 23. Furthermore, there is no suggestion

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in either of these patents to render a "3D computer graphic object to [a] 2D texture map using color values and alpha values corresponding to the 3D computer graphic object, and color values corresponding to the 2D texture map." Nor is there any suggestion in either of the cited patents to re-render "3D computer graphic object to a 2D texture map to overwrite alpha values rendered in the first pass with corrected alpha values so that translucent features of the 3D object are more accurately represented in the 2D texture map." For these reasons, applicant respectfully submits that neither Munshi nor Murphy, alone or in combination, renders claim 14 unpatentable.

Claims 10 and 11 are rejected under 35 U.S.C. §103(a) as being unpatentable over Munshi in view of Murphy and in further view of Duluk. For the reasons described below, applicant believes that neither Munshi, Murphy, nor Duluk, alone or in combination, teaches or suggests the present invention.

Claim 10 depends from claim 1 and 8 and incorporates all the elements of these claims. As described above, amended claim 1 is believed to be in condition for allowance. Therefore, the combination of claims 1, 8, and 10 is not taught or suggested in the prior art. Furthermore, there is no suggestion in any of the cited art to combine their respective teachings in the manner suggested in the Office Action. Neither Munshi nor Murphy suggest "using...maximum color values to overwrite ... initially rendered color values" for rendering a 3D computer graphic object to the 2D texture map. Conversely, Dulak lacks any suggestion for rendering a 3D computer graphic object to a 2D texture map using "maximum color values to overwrite ... initially rendered color values." Accordingly, applicant submits that claim 10 is in condition for allowance.

Claim 11 depends from claims 1, 8, and 10 and incorporates all the elements of these claims. As described above, amended claim 1 is believed to be in condition for allowance. Therefore, the combination of claims 1, 8, 10, and 11 is not taught or suggested in the prior art. Furthermore, there is no suggestion in any of the cited art to combine their respective teachings in the

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manner suggested in the Office Action to arrive at the present invention. Neither Munshi nor Murphy suggest a "maximum color value [being] selected according to the formula: $C = \text{MAX}(Cs, Cd)$ " for rendering a 3D computer graphic object to the 2D texture map. Conversely, Dulak lacks any suggestion for rendering a 3D computer graphic object to a 2D texture map using "maximum color value is selected according to the formula $C = \text{MAX}(Cs, Cd)$." For these reasons, applicant submits that claim 11 is in condition for allowance.

Claim 12 is rejected under 35 U.S.C. §103(a) as being unpatentable over Munshi in view of Murphy, and in further view of Emberling. Claim 12 depends from claims 1 and 8 and incorporates all the elements of these claims. As described above, amended claim 1 is believed to be in condition for allowance. Therefore, the combination of claims 1, 8, and 12 is not taught or suggested in the prior art. Furthermore, there is no suggestion in any of the cited art to combine their respective teachings in the manner suggested in the Office Action. Neither Munshi nor Murphy suggest using the formula a " $C = As^*Cs + (1-As)^*Cd$ " for rendering a 3D computer graphic object to a 2D texture map. Conversely, Emberling lacks any suggestion for rendering a 3D computer graphic object to a 2D texture map using "according to the formula: $C = As^*Cs + (1-As)^*Cd$." For these reasons, applicant submits that claim 12 is in condition for allowance.

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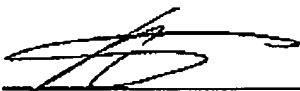
Reconsideration of the application and allowance of claims 1-16 are respectfully requested.

Respectfully submitted,


W. David Sartor
Reg. No. 50,560
Beusse, Brownlee, Wolter Mora & Maire, P.A.
390 N. Orange Avenue, Suite 2500
Orlando, FL 32801
(407) 926-7724

CERTIFICATE OF TRANSMISSION

I HEREBY CERTIFY that this Amendment is being FAXED to the U.S. Patent Office at 571-273-8300 (Central Fax Number) on this 11th day of November, 2005.


W. David Sartor